



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200  
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**D3121-141**  
**Job Sheet 190405**



**Part No:** D3121-141

**Job Qty:** 10 pcs

**Part Name:** Bracket Assembly



**Part Weight:** 0 lbs

**Status:** New

**Priority:** Medium

**Job Created:** 2/8/19

**Job Tracking No:**

**Due Date:** 2/28/19

**Created By:** Marie Lajeunesse

**Type:** Stock

**Description:**

**Note:** DWG REV E IPP Rev:Pick:A 04.02.18 New issue KJ/DS IPP Rev:B ECN 1060 07-11-12 DD verified by: EC  
IPP Rev:C New Dimensions for Blank Size 08-07-23 JLM Verified By:EC

**Ship Via:**

### Bill of Materials

### Job Routing

| Op<br>No | Operation         | Qty    | Start Date | Due<br>Date | Standard     |            | Workcenter/Supplier             | Sign-off      |
|----------|-------------------|--------|------------|-------------|--------------|------------|---------------------------------|---------------|
|          |                   |        |            |             | Setup<br>Hrs | Run<br>Hrs | Workcenter / Supplier Lead Time |               |
| 100      | Bandsaw - 1       | 10 pcs | 2/28/19    | 2/28/19     | 0.00         | 1.13       | Bandsaw - 1                     |               |
| 110      | HAAS 4 Axis - B4B | 10 pcs | 2/28/19    | 2/28/19     | 0.47         | 19.61      | HAAS - 1 - B4B                  |               |
|          |                   |        |            |             |              |            | HAAS - 2 - B4B                  |               |
|          |                   |        |            |             |              |            | HAAS - 3 - B4B                  |               |
|          |                   |        |            |             |              |            | HAAS - 4 - B4B                  |               |
| 120      | QC 2              | 10 pcs | 2/28/19    | 2/28/19     | 0.00         | 0.00       | QC 2 - 1                        | Kt 2019-02-25 |
|          |                   |        |            |             |              |            | QC 2 - 12                       | Kt 2019-02-25 |
|          |                   |        |            |             |              |            | QC 2 - 14                       |               |
|          |                   |        |            |             |              |            | QC 2 - 17                       |               |
|          |                   |        |            |             |              |            | QC 2 - 19                       |               |
|          |                   |        |            |             |              |            | QC 2 - 2                        |               |
|          |                   |        |            |             |              |            | QC 2 - 20                       |               |
|          |                   |        |            |             |              |            | QC 2 - 22                       |               |
|          |                   |        |            |             |              |            | QC 2 - 23                       |               |
|          |                   |        |            |             |              |            | QC 2 - 25                       |               |
|          |                   |        |            |             |              |            | QC 2 - 32                       |               |
|          |                   |        |            |             |              |            | QC 2 - 33                       |               |
|          |                   |        |            |             |              |            | QC 2 - 35                       |               |
|          |                   |        |            |             |              |            | QC 2 - 39                       |               |
|          |                   |        |            |             |              |            | QC 2 - 4                        |               |
|          |                   |        |            |             |              |            | QC 2 - 40                       |               |
|          |                   |        |            |             |              |            | QC 2 - 44                       |               |
|          |                   |        |            |             |              |            | QC 2 - 45                       |               |
|          |                   |        |            |             |              |            | QC 2 - 48                       |               |
|          |                   |        |            |             |              |            | QC 2 - 49                       |               |
|          |                   |        |            |             |              |            | QC 2 - 50                       |               |
|          |                   |        |            |             |              |            | QC 2 - 51                       |               |
|          |                   |        |            |             |              |            | QC 2 - 52                       |               |
|          |                   |        |            |             |              |            | QC 2 - 54                       |               |
|          |                   |        |            |             |              |            | QC 2 - 56                       |               |

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**-PART**

AEROSPACE

UAT Aerospace Ltd.  
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Container No: S155911



Part: D3121-141

Job No: 190405

Serial No/Batch: S155911

Revision:

Inspector:

Exp Date:

Instructions: Various STC's

Date: 02/22/19

|     |                             |        |         |      |      |                       |              |
|-----|-----------------------------|--------|---------|------|------|-----------------------|--------------|
| 130 | QC 8                        | 10 pcs | 2/28/19 | 0.00 | 0.00 | QC 2 - 57             |              |
|     |                             |        |         |      |      | QC 2 - 62             |              |
|     |                             |        |         |      |      | QC 2 - 63             |              |
|     |                             |        |         |      |      | QC 2 - 8              |              |
|     |                             |        |         |      |      | QC 2 - 66             |              |
|     |                             |        |         |      |      | QC 2 - 64             |              |
|     |                             |        |         |      |      | QC 8 - 12             |              |
|     |                             |        |         |      |      | QC 8 - 14             |              |
|     |                             |        |         |      |      | QC 8 - 17             |              |
|     |                             |        |         |      |      | QC 8 - 20             |              |
|     |                             |        |         |      |      | QC 8 - 25             |              |
|     |                             |        |         |      |      | QC 8 - 3              |              |
|     |                             |        |         |      |      | QC 8 - 32             |              |
|     |                             |        |         |      |      | QC 8 - 33             |              |
|     |                             |        |         |      |      | QC 8 - 35             |              |
|     |                             |        |         |      |      | QC 8 - 39             |              |
|     |                             |        |         |      |      | QC 8 - 4              |              |
|     |                             |        |         |      |      | QC 8 - 44             |              |
|     |                             |        |         |      |      | QC 8 - 45             |              |
|     |                             |        |         |      |      | QC 8 - 49             |              |
|     |                             |        |         |      |      | QC 8 - 58             |              |
|     |                             |        |         |      |      | QC 8 - 8              | D.A 19-02-26 |
|     |                             |        |         |      |      | QC 8 - 9              |              |
|     |                             |        |         |      |      | QC 8 - 68             |              |
|     |                             |        |         |      |      | QC 8 - 67             |              |
|     |                             |        |         |      |      | QC 8 - 1 (A)          |              |
|     |                             |        |         |      |      | QC 8 - 47             |              |
| 140 | Small Fab - 2 - B4B         | 10 pcs | 2/28/19 | 0.00 | 0.28 | Small Fab - 1 - B4B   |              |
|     |                             |        |         |      |      | Small Fab - 2 - B4B   |              |
|     |                             |        |         |      |      | Small Fab - 3 - B4B   | DAS          |
|     |                             |        |         |      |      | Small Fab - 4 - B4B   | 36           |
|     |                             |        |         |      |      | Small Fab - 5 - B4B   | 9-89         |
|     |                             |        |         |      |      | Small Fab - 6 - B4B   |              |
|     |                             |        |         |      |      | Small Fab - 7 - B4B   |              |
| 150 | QC 5                        | 10 pcs | 2/28/19 | 0.00 | 0.00 | QC 5 - 10             |              |
|     |                             |        |         |      |      | QC 5 - 12             |              |
|     |                             |        |         |      |      | QC 5 - 17             |              |
|     |                             |        |         |      |      | QC 5 - 18             |              |
|     |                             |        |         |      |      | QC 5 - 19             |              |
|     |                             |        |         |      |      | QC 5 - 22             |              |
|     |                             |        |         |      |      | QC 5 - 24             |              |
|     |                             |        |         |      |      | QC 5 - 3              |              |
|     |                             |        |         |      |      | QC 5 - 42             |              |
|     |                             |        |         |      |      | QC 5 - 43             |              |
|     |                             |        |         |      |      | QC 5 - 49             |              |
|     |                             |        |         |      |      | QC 5 - 51             |              |
|     |                             |        |         |      |      | QC 5 - 58             |              |
|     |                             |        |         |      |      | QC 5 - 68             | DAS          |
|     |                             |        |         |      |      | QC 5 - 9              | 40           |
|     |                             |        |         |      |      | QC 5 - 50             | 9-89         |
|     |                             |        |         |      |      | QC 5 - 30             |              |
| 160 | Packaging 3-1 - Stock - B4B | 10 pcs | 2/28/19 | 0.00 | 0.00 | Packaging 3 - 1 - B4B |              |
|     |                             |        |         |      |      | Packaging 3 - 2 - B4B |              |
|     |                             |        |         |      |      | Packaging 3 - 3 - B4B |              |
|     |                             |        |         |      |      | Packaging 3 - 4 - B4B |              |
|     |                             |        |         |      |      | Packaging 3 - 5 - B4B |              |
|     |                             |        |         |      |      | Packaging 3 - 6 - B4B |              |
|     |                             |        |         |      |      | Packaging 3 - 7 - B4B |              |
|     |                             |        |         |      |      | Packaging 3 - 8 - B4B |              |

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|     |            |        |         |           |                        |             |
|-----|------------|--------|---------|-----------|------------------------|-------------|
|     |            |        |         |           | Packaging 3 - 9 - B4B  |             |
|     |            |        |         |           | Packaging 3 - 10 - B4B |             |
|     |            |        |         |           | Packaging 3 - 11 - B4B |             |
|     |            |        |         |           | Packaging 3 - 12 - B4B |             |
|     |            |        |         |           | Packaging 3 - 13 - B4B |             |
|     |            |        |         |           | Packaging 3 - 14 - B4B |             |
|     |            |        |         |           | Packaging 3 - 15 - B4B |             |
|     |            |        |         |           | Packaging 3 - 16 - B4B |             |
|     |            |        |         |           | Packaging 3 - 17 - B4B |             |
|     |            |        |         |           | Packaging 3 - 18 - B4B |             |
|     |            |        |         |           | Packaging 3 - 19 - B4B |             |
|     |            |        |         |           | Packaging 3 - 20 - B4B |             |
|     |            |        |         |           | Packaging 3 - 21 - B4B |             |
|     |            |        |         |           | Packaging 3 - 22 - B4B |             |
|     |            |        |         |           | Packaging 3 - 23 - B4B |             |
|     |            |        |         |           | Packaging 3 - 24 - B4B |             |
|     |            |        |         |           | Packaging 3 - 25 - B4B |             |
|     |            |        |         |           | Packaging 3 - 26 - B4B |             |
|     |            |        |         |           | Packaging 3 - 27 - B4B | 5018        |
|     |            |        |         |           | Packaging 3 - 28 - B4B | MAR 07 2019 |
|     |            |        |         |           | Packaging 3 - 29 - B4B |             |
|     |            |        |         |           | Packaging 3 - 30 - B4B |             |
|     |            |        |         |           | Packaging 3 - 31 - B4B |             |
|     |            |        |         |           | Packaging 3 - 32 - B4B |             |
|     |            |        |         |           | Packaging 3 - 33 - B4B |             |
|     |            |        |         |           | Packaging 3 - 34 - B4B |             |
|     |            |        |         |           | Packaging 3 - 35 - B4B |             |
|     |            |        |         |           | Packaging 3 - 36 - B4B |             |
| 170 | QC 21 - SA | 10 pcs | 2/28/19 | 0.00 0.00 | QC 21 - SA - 21        | 21          |
|     |            |        |         |           | QC 21 - SA - 70        | 9-88        |
|     |            |        |         |           | QC 21 - SA - 53        | MAR 07 2019 |

Part Op 100 - (Bandsaw) Cut blanks: (1.250" x 2.000") 6.600" long  
 Descriptions: 110 - 1-Machine D3121-111 as per Folio FA361 and Dwg D3121 Identify as D3121-111 3-Scribe batch number  
 120 - (QC2- Inspect parts off machine FAI/FAIB)  
 130 - QC8- Inspect parts - second check)  
 140 - (Small Fab) Assemble D3121-141 as per Dwg D3121.  
 150 - (QC5- Inspect part completeness to step on W/O)  
 160 - (Identify as per dwg & Stock Location: \_\_\_\_\_)  
 170 - (QC21- Final Inspection - Work Order Release)

| Job BOM            |                          |                    |                         |           |
|--------------------|--------------------------|--------------------|-------------------------|-----------|
| Part / Item        | Component Name           | Quantity           | Operation               | Container |
| M17-4-B1.250X2.000 | 17-4 SS Bar 1.250 x 2.00 | 5.5000 ft (.55 ea) | 100-Bandsaw - 1         | S120118   |
| D3121-21           | Bolt                     | 10 pcs (1 ea)      | 140-Small Fab - 2 - B4B | S1329556  |
| D3121-241          | Bearing Assembly         | 10 pcs (1 ea)      | 140-Small Fab - 2 - B4B | S149983   |
|                    |                          |                    |                         | S133876   |

| Job Allocations         |                    |          |           |           |
|-------------------------|--------------------|----------|-----------|-----------|
| Operation               | Component Part     | Required | Inventory | Allocated |
| 100-Bandsaw - 1         | M17-4-B1.250X2.000 | 6        | 6         | 0         |
| 140-Small Fab - 2 - B4B | D3121-21           | 10       | 5         | 0         |
|                         | D3121-241          | 10       | 38        | 0         |

| Part Specifications                |  |
|------------------------------------|--|
| Specifications could not be found. |  |

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|                                            |  |                     |           |
|--------------------------------------------|--|---------------------|-----------|
| <b>DART AEROSPACE LTD</b>                  |  | <b>Work Order:</b>  | 190405    |
| <b>Description:</b> Bracket                |  | <b>Part Number:</b> | D3121-111 |
| <b>Inspection Dwg:</b> D3121 <b>Rev:</b> E |  | <b>Page 1 of 1</b>  |           |

### FIRST ARTICLE INSPECTION CHECKLIST

| Drawing Dimension | Tolerance     | Actual Dimension | Accept | Reject | Method of Inspection | Comments   |
|-------------------|---------------|------------------|--------|--------|----------------------|------------|
| Ø0.392            | +0.002/-0.000 | 0.3935           | ✓      |        | Kt-01                | micrometre |
| 0.75              | +/-0.030      | 0.750            | ✓      |        | Kt-05                | vern.      |
| 0.375             | +/-0.010      | 0.375            | ✓      |        | " "                  | " "        |
| 2.14              | +/-0.030      | 2.140            | ✓      |        | " "                  | " "        |
| 1.96              | +/-0.030      | 1.964            | ✓      |        | " "                  | " "        |
| 0.280             | +/-0.010      | 0.277            | ✓      |        | " "                  | " "        |
| 3.330             | +/-0.010      | 3.325            | ✓      |        | " "                  | " "        |
| 3.630             | +/-0.010      | 3.624            | ✓      |        | " "                  | " "        |
| R0.25             | +/-0.030      | 0.250            | ✓      |        | ---                  | R-G        |
| R0.375            | +/-0.010      | 0.375            | ✓      |        | ---                  | R-G        |
| Ø0.201            | +/-0.010      | 0.201            | ✓      |        | Kt-05                | vern.      |
| 0.100             | +/-0.010      | 0.100            | ✓      |        | " "                  | " "        |
| 4.580             | +/-0.010      | 4.575            | ✓      |        | Sluob                | H-G        |
| 6.18              | +/-0.030      | 6.180            | ✓      |        | Kt-05                | vern.      |
| 5.89              | +/-0.030      | 5.890            | ✓      |        | 3/206                | H-G        |
| 0.080             | +/-0.010      | 0.080            | ✓      |        | Kt-05                | vern.      |
| 0.300             | +/-0.010      | 0.300            | ✓      |        | " "                  | " "        |
| 30°               | +/-0.1°       | 30°              | ✓      |        | " "                  | " "        |
| R0.25             | +/-0.030      | 0.250            | ✓      |        | " "                  | " "        |
| 0.130             | +/-0.010      | 0.129            | ✓      |        | " "                  | " "        |
| 0.664             | +/-0.010      | 0.664            | ✓      |        | " "                  | " "        |
| 0.381             | +/-0.010      | 0.381            | ✓      |        | Kt-05                | " "        |
| 0.201             | +/-0.010      | 0.201            | ✓      |        | " "                  | " "        |
| 0.400             | +/-0.010      | 0.400            | ✓      |        | " "                  | " "        |
| 0.580             | +/-0.010      | 0.580            | ✓      |        | " "                  | " "        |
| 100°              | +/-0.1°       | 100°             | ✓      |        | " "                  | " "        |
| 0.032             | +0.000/-0.010 | 0.029            | ✓      |        | Kt-04                | micrometre |

|                                         |                       |                              |
|-----------------------------------------|-----------------------|------------------------------|
| <b>Measured by:</b> KT <sup>DAS</sup> 1 | <b>Audited by:</b> Ba | <b>Preliminary Approval:</b> |
| <b>Date:</b> 2017-02-24 9-89            | <b>Date:</b> 19-02-26 | <b>Date:</b>                 |

| Rev | Date     | Change                                          | Revised by | Approved |
|-----|----------|-------------------------------------------------|------------|----------|
| A   | 04.01.12 | New Issue P/O D3121-141                         | KJ/RF      |          |
| B   | 04.05.05 | Dimensions changed/re-arranged per Dwg revision | KJ/JLM     |          |
| C   | 06.06.14 | Dwg Rev. updated                                | KJ/JLM     |          |
| D   | 08.01.16 | Dimensions updated per Dwg Rev. E               | KJ/EC/DD   |          |
| E   | 08.05.28 | Tolerance revised for Ø0.201 dimension          | KJ/DD      |          |
| F   | 13.10.22 | Tolerance revised for Ø0.201 dimension          | KJ         |          |



Entered: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. \_\_\_\_\_

Route update only ☐

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                        |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------|--|
| Job: _____<br><br>Part No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/> | <b>DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/> </div> <div>           Eng. (Non-AW) <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Water Jet <input type="checkbox"/><br/>           Supplier <input type="checkbox"/><br/>           Quality <input type="checkbox"/> </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                        |  |
| Date :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Sequence #:                                                                                                                       | QTY Affected :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | MRB (QSI042)           |  |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                   | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | Completed By           |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | Lead hand / Supervisor |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | QC / QA Coordinator    |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                        |  |
| <b>Root Cause</b><br><br><div style="display: flex; flex-direction: column; align-items: flex-start;"> <div>Operator <input type="checkbox"/></div> <div>Manufacturing Process <input type="checkbox"/></div> <div>Equip/Tooling <input type="checkbox"/></div> <div>Handling/Preservation <input type="checkbox"/></div> <div>Material <input type="checkbox"/></div> <div>Product Improvement <input type="checkbox"/></div> <div>Process Improvement <input type="checkbox"/></div> <div>Human Factors <input type="checkbox"/></div> </div> |                                                                                                                                   | <b>FAULT CATEGORY</b><br><br><div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Pressure/Forced<br/> <input type="checkbox"/> Bending<br/> <input type="checkbox"/> Crushing<br/> <input type="checkbox"/> Cracks<br/> <input type="checkbox"/> Crimp/Kink/Ripple/Wave/Twist<br/> <input type="checkbox"/> Marks/Chatter<br/> <input type="checkbox"/> Mislabeled         </div> <div style="width: 50%;"> <input type="checkbox"/> Contamination<br/> <input type="checkbox"/> Misaligned/off center<br/> <input type="checkbox"/> BOM/Route<br/> <input type="checkbox"/> Broken/Damage/Defect<br/> <input type="checkbox"/> Incomplete/Unclear Instructions<br/> <input type="checkbox"/> Drill Holes<br/> <input type="checkbox"/> Fit/Function         </div> <div style="width: 50%;"> <input type="checkbox"/> Power Loss/Surge<br/> <input type="checkbox"/> Folio/Program<br/> <input type="checkbox"/> Grain Direction<br/> <input type="checkbox"/> Weld<br/> <input type="checkbox"/> Wrong Stock Pulled<br/> <input type="checkbox"/> Out of Sequence<br/> <input type="checkbox"/> Off-set/Set-up         </div> <div style="width: 50%;"> <input type="checkbox"/> Positioned Wrong<br/> <input type="checkbox"/> Outside Tolerance<br/> <input type="checkbox"/> Drawing<br/> <input type="checkbox"/> Finish<br/> <input type="checkbox"/> Part Lost/Missing<br/> <input type="checkbox"/> Misread         </div> </div> |  |                        |  |
| Other/Details:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                        |  |